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A NOVEL ENDOVENOUS APPROACH FOR TREATMENT OF MASSIVE CENTRAL VENOUS OR PULMONARY ARTERIAL THROMBUS, MASS, OR VEGETATION: THE ANGIOVAC SUCTION CANNULA AND CIRCUIT

ACC Poster Contributions
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Background: Patients with massive right atrial, pulmonary arterial and venocaval thrombus, and valvular vegetation or intravascular mass are at risk for significant short and long-term morbidity and mortality. Limited non-operative options exist for these patients. A novel device for large-volume endovenous aspiration (AngioVac, Vortex Medical, Norwell, MA) employs either a 20F or 25F inflow cannula - introduced via a 26F sheath or femoral venous cut-down, respectively - and a 16F return cannula placed in the contralateral femoral vein or the internal jugular vein. This is the first report of the Worldwide patient experience with this device.

Methods: All patients treated with the AngioVac cannula and circuit were retrospectively reviewed. Demographic, clinical, and procedural characteristics were collected by chart review.

Results: Fourteen patients have undergone endovenous mechanical aspiration with this novel device. Indications included: right atrial vegetations associated with central venous catheters or pacemaker leads (4/14), or valvular vegetations; significant vena caval obstruction from intravascular thrombus or tumor (4/14); or massive pulmonary embolism with contraindications to thrombolytic therapy (6/14). Mean age (range) was 54 years (29-82 years). Eight of 14 (57%) patients were male. Material was aspirated in 86% (12/14) of patients. Seventy-nine percent (11/14) of patients achieved procedural success - 9/14 were completely successful, and 2/14 were partially successful. Lack of success was most often due to thrombus beyond the site of catheter aspiration in a patient with pulmonary embolism or residual tricuspid valve vegetation in patients with right-sided endocarditis. There was one procedure-associated pericardial effusion requiring treatment. There were no procedure-associated symptomatic pulmonary emboli or death.

Conclusions: Endovenous mechanical aspiration with the AngioVac device appears safe and may be an effective therapy for appropriate patients with massive thromboemboli and right atrial vegetations with limited therapeutic alternatives. Prospective clinical trials with this device are required to adequately define its role.